

MINUTES OF DOT-AGC BRIDGE DESIGN SUBCOMMITTEE MEETING

The DOT-AGC Joint Bridge Design Subcommittee met on June 11th, 2003. Those in attendance were:

Greg Perfetti	State Bridge Design Engineer (Co-Chairman)
Berry Jenkins	Manager of Highway Heavy Division, Carolinas Branch AGC (Co-Chairman)
Ron Hancock	State Bridge Construction Engineer
Mark Lively	Crowder Construction Co.
Richard Kirkman	Dane Construction
Kevin Burns	R. E. Burns & Sons Co.
Richard Holshouser	Sanford Contractors
Tom Koch	Structure Design Project Engineer
Paul Lambert	Structure Design Project Engineer
Njoroge Wainaina	State Geotechnical Engineer
K. J. Kim	Geotechnical Engineering Unit
Brian Hunter	Materials and Tests Unit
Owen Cordle	Materials and Tests Unit
Bruce Long	Long Foundation Drilling
J. R. Childress	Long Foundation Drilling
Larry Fowler	McKinney Drilling Company
Harris Wilson	Rosse Corporation
John Erwin	Structure Design Project Design Engineer (Secretary)

The following items of business were discussed:

1. The minutes of the April 9th meeting were accepted.
2. *Drilled Shafts*

Mr. Long, speaking on behalf of the Carolina chapter of ADSC, presented a list of concerns regarding drilled shaft construction procedures, inspections and materials. The documented concerns can be viewed by clicking [here](#). The committee listened to Mr. Long and committed to reviewing the concerns, discussing them internally, and then proceeding with a follow-up meeting. Those attending the follow-up meeting will consist of representatives from the ADSC, Geotechnical Engineering Unit, Construction Unit, and Richard Holshouser from the AGC committee.

3. *Direct Submittals*

Mr. Burns stated that direct submittals to Structure Design had expedited the review and approval process for contractors and questioned if direct submittals could be expanded to foundation items and concrete mixes. Mr. Erwin stated that the Geotechnical Engineering Unit had recently proposed a revision to the Submittal of Working Drawings PSP to include direct submittals to their Unit for pile hammers, temporary

fabric or wire wall, drilled pier construction sequence and several other items. This PSP should be included in projects in the near future. Mr. Burns stated that the drilled pier construction sequence is often the same for every project and suggested that each drilling company submit a file of standard procedures to the Geotechnical Engineering Unit. Then, after a project is awarded the contractor can specify one of the standard procedures on file or, in special cases, submit a special procedure for approval. Mr. Hancock stated that the field inspectors used the construction sequence submittal for inspection purposes but a checklist of some sort could be developed for their use. Mr. Holshouser suggested that the same could be done for pile hammers as well. *Mr. Wainaina stated that the Geotechnical Engineering Unit would discuss these issues internally and then report back to the committee.*

Mr. Cordle stated that concrete mixes should continue to go through the Resident Engineer because the Materials and Test Unit is not the administrator of the contract. The Resident Engineer often times compares the submitted mix designs to the special provisions for compliance before forwarding to the Materials and Test Unit. Mr. Perfetti stated that the Resident Engineer would continue to get a carbon copy; but, the submittal would come directly to the Materials and Test Unit. *Mr. Cordle stated that the Materials and Tests Unit would need to discuss this issue internally and then report back to the committee.*

3. *Pour Sequence*

Mr. Erwin distributed a detail of an optional pouring sequence for prestressed girder bridges. The pouring sequence would allow for the contractors to pour several spans at once, with the exception of an 8' blockout over the interior bents. The pour limit for individual pours would remain 300 yd³, but the 8' sections could be poured without a screed. Mr. Hancock stated that this method had been successfully used on several current projects and asked if it should be included as an option in future plans. After some discussion, the contractors of the committee agreed that this pouring sequence would save time and labor costs and should be included as an option on the plans. *Structure Design committed to developing this detail and placing it as an option on future plans.*

4. *Bridge Layout*

Mr. Erwin stated that the Department is seeing an increase of two-span continuous steel bridges on slightly curved alignments. The continuous girders are placed parallel to the long chord of the bridge and short chords are not used in the layout. However, when detailing arc offsets on the plans, the value of the arc offset becomes large. Mr. Erwin asked the contractors if it would be better to show the arc offsets from the short chords or the long chords. After some discussion, the contractors on the committee agreed that on a heavily skewed bridge, the arc offset for the long chord would be difficult to lay out. Therefore, the committee decided it was preferred to detail the arc offsets from the short chord.

5. *Cored Slab Overlay*

Mr. Erwin stated that for cored slab overlays, the asphalt depth at the bearing is dependent on a minimum asphalt depth of $\frac{3}{4}$ " at the midspan gutterline. Mr. Erwin asked if it was possible to place the asphalt as designed or if the contractors paved a constant depth over the length of the bridge. Mr. Burns stated that a stringline was established and survey shots were taken to provide the asphalt depths that were specified on the plans as close as possible. However, a $\frac{3}{4}$ " asphalt depth with superpave mixes was not possible. For most cases a minimum of 1"-1 $\frac{1}{2}$ " asphalt layer was placed. *Mr. Erwin stated that the Structure Design Unit would revise the design criteria for the asphalt thickness on cored slabs.*

6. *Other*

i. Pile Hammer Energies

Mr. Holshouser stated that currently the plans show an estimated energy range for pile hammers required to drive the piles for a given project. This enables the contractor to determine not only the required hammer size but also the crane size needed to position the hammer. However, often the energy range given is too large to predict the required hammer size, which makes it difficult to accurately bid the job. Therefore, to accurately bid the job is difficult. Mr. Holshouser asked if the Geotechnical Engineering Unit could give more guidance. *Representatives from the Geotechnical Engineering Unit were not present at this point but will be contacted regarding this issue.*

ii. Slope Protection Elevations

Mr. Holshouser stated that it was very difficult for the contractor to accurately calculate the elevation at the bottom of the slope protection for construction. Mr. Holshouser asked if the Structure Design Unit could show the elevations on the general drawing for their use. *The Structure Design Unit committed to detailing additional elevations on the general drawing.*

iii. Next Meeting

The next meeting is scheduled for August 13th at 10:00 a.m. in the Structure Design Unit Conference Room C.